Current Astronomy

OCTOBER
2005

RIVER BEND ASTRONOMY CLUB NEWSLETTER

The September Carnival at the Children's Museum mixed learning and fun. The club was there, demonstrating black holes and distributing information. Above, Mike Veith helps a young visitor see a large sunspot using a filtered C–8 and piggybacked PST. PHOTO BY ERIC YOUNG

RIVER BEND ASTRONOMY CLUB

***River Bend Astronomy Club** serves astronomy enthusiasts of the American Bottom region, the Mississippi River bluffs and beyond, fostering observation, education and a spirit of camaraderie.*

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Affiliated with the Astronomical League, dedicated to fostering astronomical education, providing incentives for astronomical observation and research, and assisting communication among amateur astronomical societies.
www.astroleague.org

Affiliated with the NASA Night Sky Network, a nationwide coalition of amateur astronomy clubs bringing the science, technology and inspiration of NASA's missions to the general public.
nightsky.jpl.nasa.gov

Current Astronomy CLUB NEWSLETTER

EDITOR	Eric Young younger@wustl.edu

Monthly Meeting

Saturday, October 1st, 2005 • 7:00 p.m.

Menz Observatory

13721 Kayser Road, Highland, IL 62249

Phone: (618-654-1150 Cell: (618) 910-4068

Looked up lately?

Join River Bend Astronomy Club

Want to learn more about astronomy? The members of River Bend Astronomy Club invite you to join. You won't need expensive tools or special skills — just a passion for observing the natural world.

• Meetings offer learning, peeks through great telescopes and fun under the stars.

• You will receive the club newsletter, *Current Astronomy*, packed with news and photos.

• Get connected with our member-only web site and discussion group.

• Borrow from the club's multimedia library.

• And that's not all! Through club membership you also join the Astronomical League, with its special programs and a colorful quarterly newsletter to enrich your hobby.

We meet monthly, observe regularly, e-mail news and quips constantly, and generally have a good time. Won't you join us?

Name(s) _____

Address _____

City _____ State _____ Zip _____

Phone (Day)_____ (Evening)_____

Email address (to receive club news and information):

_____

Where did you hear of our club?

_____

How long have you been interested in astronomy? _____

Do you have optical equipment? ___ Telescope ___ Binoculars

Are you afraid of the dark? ___ Yes ___ No (just kidding)

I am submitting my application for:

_____ Adult membership(s) @ $20.00/year (18 years or older)

_____ Youth membership(s) @ $15.00/year (under 18)

I enclose a check for a total of $_____
made out to "Mike Veith, Treasurer, RBAC."

Signature _____

Date _____

River Bend Astronomy Club
c/o Gary Kronk, 132 Jessica Drive, St. Jacob, IL 62281
web: riverbendastro.org e-mail: riverbendastro@charter.net

AUGUST 05

Sunriver Observatory

Nature center exhibits the cosmos

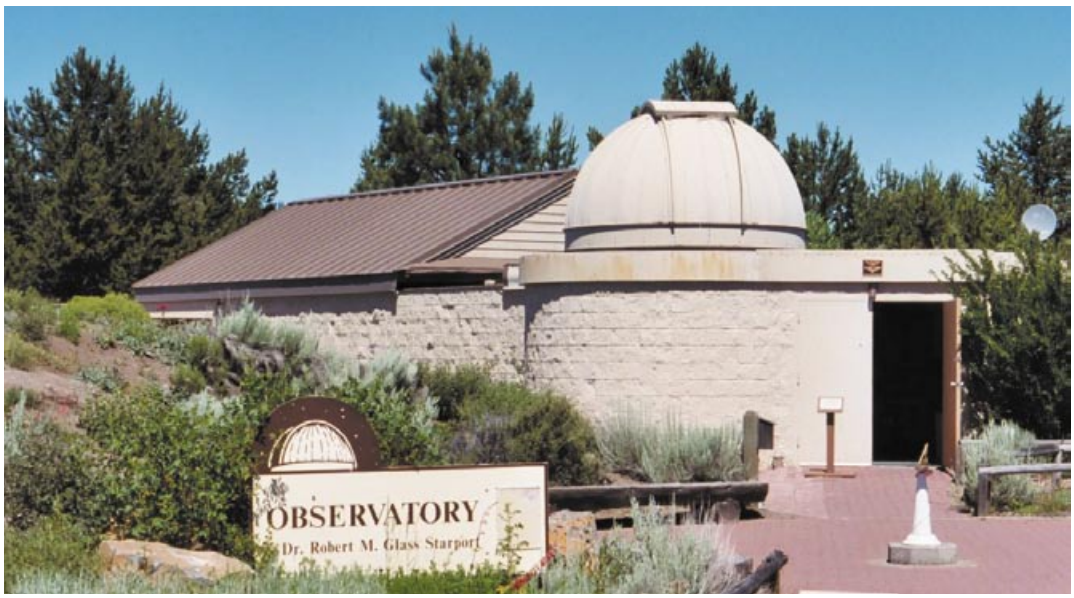
BY TERRY AND JEFF MENZ

In July, the Menz family had the opportunity to visit the Sunriver Nature Center and Observatory in Sunriver, Oregon. Sunriver is located 15 miles south of Bend, Oregon, a town of 65,000 inhabitants. Nestled in the high-desert region of central Oregon and surrounded by the Deschutes National Forest, the area boasts of dry air, elevations near 3600 feet, and light-pollution controls that nearly eliminate all skyglow. The nature center features exhibits as well as a nature trail that culminates in the observatory for a viewing of solar events. The observatory includes a dome with one mounted scope, a rolloff roof with 6 additional piers with mounted scopes, and ample patio space for setting up the center's 8-inch Dobsonians as well as gathering groups for constellation tours.

Daytime visitors can view sunspots and solar prominences through a Coronado SolarMax 40 with a hydrogen alpha filter as well as a TeleVue 102 refractor with a solar filter. This daytime stop gave us the chance to look over the array of scopes and the wide collection of eyepieces, including 1- and 2-inch Naglers, Plössls, and Panoptics. The dome houses a 20 inch Ritchey-Chrétien telescope (RCT), and the rolloff-roof portion of the observatory contains a 14-inch Celestron Schmidt-Cassegrain telescope (SCT), an 18-inch Newtonian reflector, the SolarMax mounted on the Tele Vue refractor on the same pier, and a couple of 11-inch Celestron SCTs.

The observatory staff offers a nighttime program Tuesday through Sunday from 9 p.m. to 11 p.m. (with earlier hours in spring and fall). The program begins with a viewing of any objects visible at that hour. The scopes in the rolloff were aimed at Jupiter and the Moon, while the 8-inch Dobs outside were pointed at Mercury and Venus, which were too low on the horizon for the scopes in the rolloff.

The crowd that had assembled for the program included approximately 60 people — mostly families with school-age children. (For a weeknight, we considered it a great turnout, but the nature center staff said the turnout was actually small — hosting over 100 visitors is apparently not unusual! Terry commented to one of the staffers that they have Astronomy Day every day!) The center is also planning an Astronomy Week July 26 through 30 that includes guest speakers and a rocket science camp.



The Dr. Robert M. Glass Starport Observatory in Sunriver, OR. The 400-square-foot rolloff roof is to the left of the dome. Extensive brick patios in the front and the back of the observatory allowed for telescope setup and binocular and naked-eye viewing.

At 9:30 p.m., the group was directed to an educational building where we listened to a presentation on meteors and were able to examine some meteorite specimens. After a careful inventory of the meteorite specimens (No Jeff, you can't take one home!) we viewed a slide show of auroras that were photographed over the past several years in Central Oregon.

The slide show gave the skies a chance to darken (and our eyes to dark-adapt) for the laser-light constellation tour. Jeff enjoyed hearing a different version of this tour and looked for ways to enhance his school presentations. The highlights of this presentation were the International Space Station making an appearance, and some bright meteor events (Do that again!).

Now the skies were really dark and we were ready for some deep-sky objects. The staff has become quite efficient at zooming in on these objects, since the program is offered 6 days a week, so were able to quickly set up the 7 mounted scopes with an array of Messier objects. Once the group had viewed each of the scopes, the staff would quickly find another set of objects to keep us hopping from scope to scope. Finally, as the evening wound down (and, yes, the Menz family stayed well past 11 p.m.), we were able to make requests of additional objects we wished to view. Objects viewed through the different instruments included M27 (The Dumbbell Nebula), M57 (The Ring Nebula), and NGC 6992 (the eastern arc of The Veil Nebula). Viewing M51 (The Whirlpool Galaxy and its associated supernova SN2005cs) through the 20-inch RCT was a special treat.

Visitors viewing the sun through telescopes equipped with hydrogen-alpha and white-light filters. The rolloff portion of the observatory was equipped with 6 permanently-mounted piers, all capped with telescopes on equatorial mounts.

The centerpiece of the observatory is this 20-inch Richey-Chrétien telescope housed under the dome. Jeff is pictured here wondering how to fit the scope in his luggage for the flight home.

During the evening, our son, Simon, was engrossed in finding objects with the observatory's 8-inch Dobs and the 8x56 binoculars we brought along, both for his own interest and to assist fellow visitors. Our daughter, Caroline, was content to chat with Shannon (Sunriver staff member) and to meet and greet the visitors to the observatory. Terry was in awe of the orchestration of the event and the ability of the staff to meet the needs of not only the first-timers, but also the seasoned astronomers. Jeff was the kid in the candy store, soaking it all up and gathering ideas for his own observatory (Terry gets a new kitchen first!). As you can tell, we had a great experience and we would highly recommend the Sunriver Nature Center and Observatory to anyone visiting central Oregon.

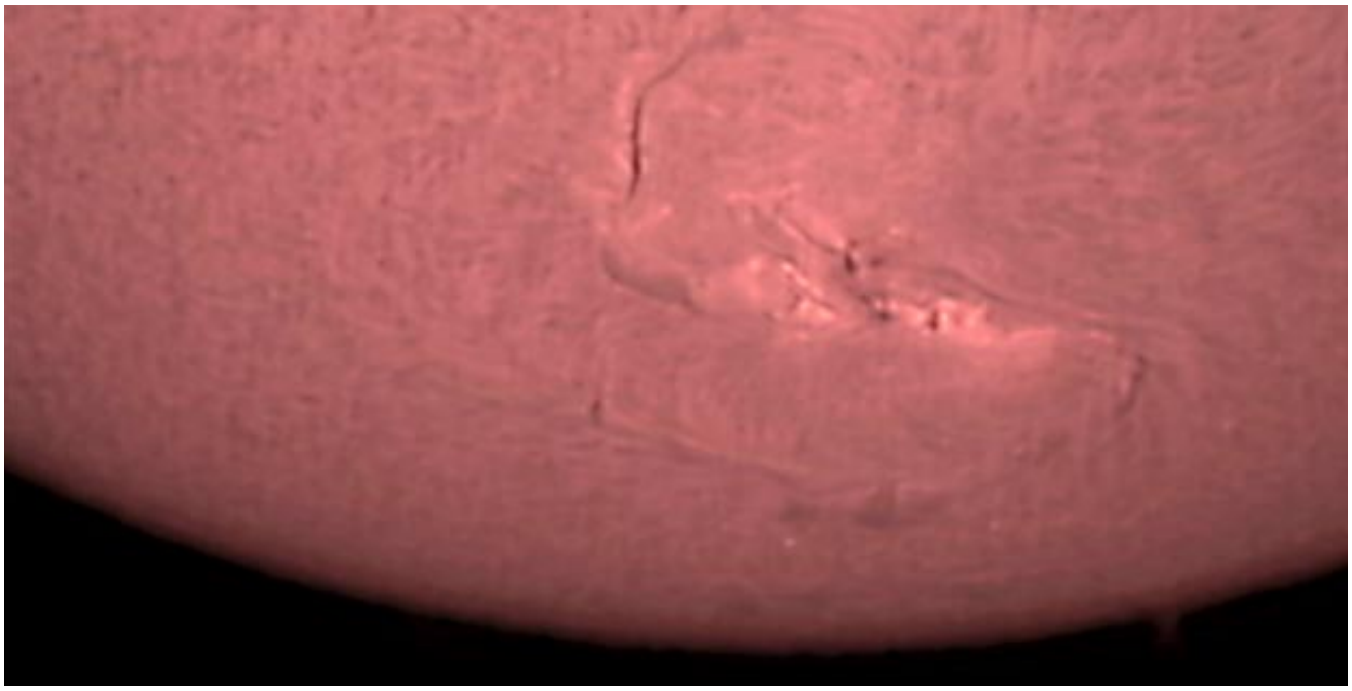
For more information, visit: www.sunrivernaturecenter.org

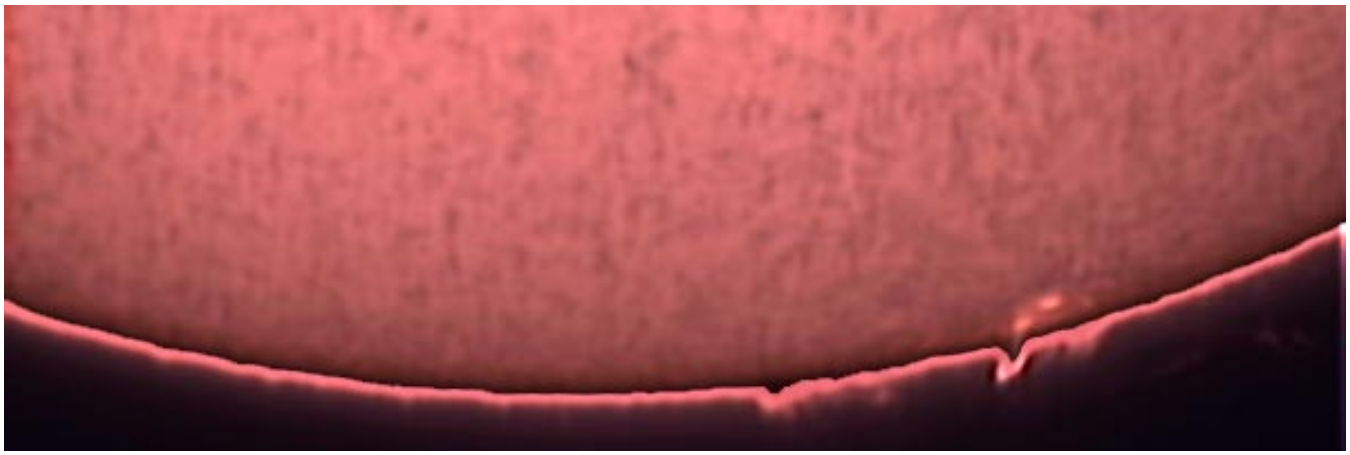
Maximum PST

Little scope images active Sun

PHOTOS BY GARY KRONK

The Coronado PST (Personal Solar Telescope), purchased last year through member donations, is the most elegant little toy some of us have ever laid eyes on. The golden telescope delivers spectacular views of solar activity, revealing flares, spots and surface detail, beyond what we can observe using basic solar filters. However, astro-imagers in the club were soon frustrated by its seeming limitations — no one was able to get a decent image using eyepiece projection into a camera. It took awhile to hit upon the idea of using a small webcam which neatly did the trick. Gary Kronk took these images on September 17th, showing Sunspot 798 (top) and activity along the edge of the Sun (below). Gary used the ToUcam and a Celestron 2x barlow lens hooked to the PST. The images were processed using Registax 3 software.





BY TONY PHILLIPS

Where no spacecraft has gone before

In 1977, Voyager 1 left our planet. Its mission: to visit Jupiter and Saturn and to study their moons. The flybys were an enormous success. Voyager 1 discovered active volcanoes on Io, found evidence for submerged oceans on Europa, and photographed dark rings around Jupiter itself. Later, the spacecraft buzzed Saturn's moon Titan — alerting astronomers that it was a very strange place indeed! — and flew behind Saturn's rings, seeing what was hidden from Earth.

Beyond Saturn, Neptune and Uranus beckoned, but Voyager 1's planet-tour ended there. Saturn's gravity seized Voyager 1 and slingshot it into deep space. Voyager 1 was heading for the stars — just as NASA had planned.

Now, in 2005, the spacecraft is nine billion miles (96 astronomical units) from the Sun, and it has entered a strange region of space no ship has ever visited before.

"We call this region 'the heliosheath.' It's where the solar wind piles up against the interstellar medium at the outer edge of our solar system," says Ed Stone, project scientist for the Voyager mission at the Jet Propulsion Laboratory.

Out in the Milky Way, where Voyager 1 is trying to go, the "empty space" between stars is not really empty. It's filled with clouds of gas and dust. The wind from the Sun blows a gigantic bubble in this cloudy "interstellar medium." All nine planets from Mercury to Pluto fit comfortably inside. The heliosheath is, essentially, the bubble's skin.

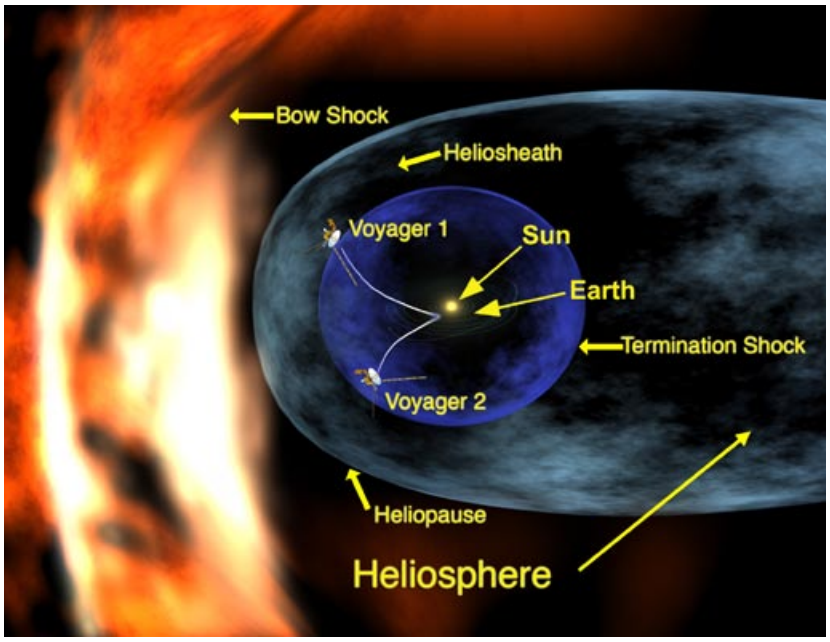
"The heliosheath is different from any other place we've been," says Stone. Near the Sun, the solar wind moves at a million miles per hour. At the heliosheath, the solar wind slows eventually to a dead stop. The slowing wind becomes denser, more turbulent, and its magnetic field — a remnant of the sun's own magnetism — grows stronger.

So far from Earth, this turbulent magnetic gas is curiously important to human life. "The heliosheath is a shield against galactic cosmic rays," explains Stone. Subatomic particles blasted in our direction by distant supernovas and black holes are deflected by the heliosheath, protecting the inner solar system from much deadly radiation.

Voyager 1 is exploring this shield for the first time. "We'll remain inside the heliosheath for 8 to 10 years," predicts Stone, "then we'll break through, finally reaching interstellar space."

What's out there? Stay tuned…

For more about the twin Voyager spacecraft, visit voyager.jpl.nasa.gov. Kids can learn about Voyager 1 and 2 and their grand tour of the outer planets at spaceplace.nasa.gov/en/kids/vgr_fact3.shtml



Voyager 1, after 28 years of travel, has reached the heliosheath of our solar system.

BY ERIC YOUNG

Kid scope, adult schemes

SEPTEMBER 10, 2005 The focal point of the evening was Dennis "Rip" Rippelmeyer's souped-up department store scope. Rip re-worked the mounting and the focuser and plugged in a decent eyepiece. If only scopes like this one came this way — but, they'd probably cost $100 more.

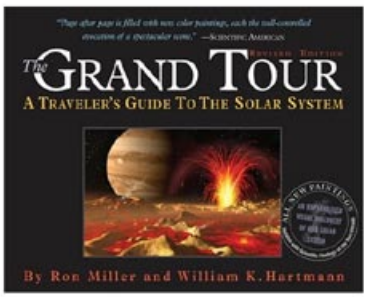
SCIENCE! Could club members help students advance toward a better understanding of the science of astronomy? Terry Menz suggests that we talk to the schools and let teachers know of our resources — maybe even invite them to a meeting. Terry will draft a form letter that club members can send to local schools.

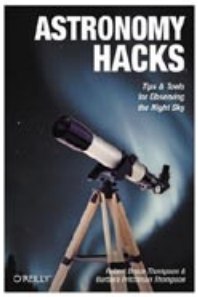
MARTIAN PARTY The Red Planet Rendezvous is scheduled for November 11th at St. Jacob Park (rain date: November 12th).

CHEESEHEADS The North Central Region of the Astronomical League (NCRAL) will gather on April 21–22, 2006, in Appleton, WI. RBAC vice-president Jamie Goggin suggests that we sponsor a representative so we can have a presence there and learn about the League's activities. Bill Breeden was named as a possible traveler. (Bill, who smelled a gas leak just before he was about to leave for the September meeting, was home with his head in his oven.)

At the Children's Museum Carnival, Mark Brown, right, uses a NASA Night Sky Network kit to show the dangers of loitering too near a black hole.

BOOKWORMS New books added to the club library: *The Grand Tour: A Traveler's Guide to the Solar System*, by William K. Hartmann and Ron Miller (a gorgeous picture book); and *Astronomy Hacks* by Robert Bruce Thompson and Barbara Fritchman Thompson (a beginner's guide to astronomy). Contact our librarian, Kathy Kronk, for more information





MR. MONEYBAGS As of September 10th we had over $440 in the bank. So said treasurer Mike Veith, who added that we're paid up for a few years for our web site hosting and domain name registration. The money is already burning a hole in his pocket.

HOYLETON The Holyleton school group, which visited us last winter, is apparently alive and well. They've a new superintendent who supports their astronomy outreach program and wants to exchange information.

NIGHTDREAMING A long discussion ensued about how the club could extend its own outreach activities. What if we had a permanent observatory for members' use and for public education? How could we finance and staff it? Out of such wild schemes the notion of this enthusiast's group, the River Bend Astronomy Club, was born. We're coming up on our five-year anniversary (summer of 2006.) Who knows what the future holds? Thanks for all you do to make the club fun and friendly and all the time you spend sharing the night sky with others. Hold that spirit of hope as we move forward in space and time.

October 2005

September 2005

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1

November 2005

S	M	T	W	T	F	S
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3

Holidays | Moon Phases | RBAC | Space Mission | Observing | Trivia

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25 Last quarter 1:41 a.m.	26 Cassini: Hyperion flyby	27	28	29 Prarie Skies Star Party (29–2)	30	1 RBAC meeting 7 p.m.
2 Hayden Planetarium's 70th B.D.	3 New Moon 5:28 a.m.	4	5	6 Illinois Dark Skies Star Party (6–9)	7	8
9 Draconids Peak in a.m.	10 First quarter 2:01 p.m. Columbus Day	11 Cassini: Dione flyby	12	13	14	15
16 Antares close to Venus	17 Full Moon 7:14 a.m.	18	19	20	21 Orionids Peak in a.m.	22 30th Ann. Venera 9 landing
23 Karl Jansky's 100th B.D.	24 Last quarter 8:17 p.m.	25 30th Ann. Venera 10 landing	26	27	28 Cassini: Titan flyby	29 Mars nearest the Earth
30 DST ends	31 Halloween	1 New Moon 7:25 p.m.	2	3	4	5 RBAC meeting 7 p.m.

CALENDAR BY ED CUNNIUS